

HOISTING AND RIGGING			Identifier: PRD-2007
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Subcontractors	Program Requirements Document	For Additional Info: http://EDMS	Effective Date: 09/13/04
Manual: Subcontractor Requirements		USE TYPE 3	Change Number: <u>111382 - 106580</u> Entire document changed

1. PURPOSE

This document provides requirements for subcontractors at the INEEL to ensure safety while working around hoisting and rigging activities. This document highlights requirement referenced in the "Source Documents" section, as well as CONTRACTOR requirements. Any applicable regulatory or CONTRACTOR requirements must be followed, with the most stringent requirement being met.

2. APPLICABILITY

This document applies to all subcontractors performing hoisting or rigging work at the INEEL, as specified in their contract with CONTRACTOR. Stricter requirements may be imposed by subcontractors upon their employees or subtier contractors. Subcontractors must follow the requirements of this document; however, the means of implementation may vary as determined by the subcontractor.

3. REQUIREMENTS

- 3.1 Subcontractors shall use the DOE Hoisting and Rigging Technical Standard 1090, (DOE-STD-1090), Chapter 15, "Construction Hoisting and Rigging Equipment" and Chapter 8, "Hoist." Additional requirements specific to performing hoisting and rigging operations on the INEEL are specified below.

NOTE: Additional hoisting and rigging requirements specific to Structural Steel Erection can be found in PRD-2008 "Structural Steel Erection."

3.2 Personnel Qualifications:

3.2.1 Crane Operators:

- 3.2.1.1 The purpose of this subcontractor crane operator qualification process is to ensure that prospective crane operators meet minimum job qualifications including specific physical requirements, and demonstrate the knowledge and practical skills required to safely and proficiently operate crane(s) while working on the INEEL. In addition to requirements in DOE-STD-1090, Chapter 15 section 15.3 the following Mobile Crane Operator qualifications shall be met:
- 3.2.1.2 Mobile Crane Operators with valid certification from the National Commission for the Certification of Crane

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Operators (NCCCO) qualify as being in compliance with the qualification requirements of this procedure.

- 3.2.1.3 Mobile Crane Operators without valid certification from NCCCO can become a qualified mobile crane operator for operating mobile cranes on the INEEL by:
 - 3.2.1.4 “Testing Out” - Taking and passing the INEEL Mobile Crane Operator training course, TRN17 “initial,” written and practical test or;
 - 3.2.1.5 Taking the INEEL Mobile Crane Operator training course, TRN17 “initial,” to include passing the written and practical test.
 - 3.2.1.5.1 An exemption to operate a mobile crane will be granted by the CONTRACTOR Construction ES&H manager to mobile crane operators whose qualifications to operate mobile cranes can be verified through a; resume describing past mobile crane operating experience, certificate of mobile crane operator training, trade union verification of mobile crane operating experience, etc. This exemption will be granted to those qualified operators when enrollment in the INEEL Mobile Crane Operator training course, TRN17 “initial” is confirmed.
 - 3.2.1.5.2 Failure to complete scheduled TRN17 training or failing portions of TRN17 training will void exemption.
 - 3.2.1.5.3 3.2.1.5.3 An exemption to operate mobile canes will not be granted to any mobile crane operators failing portions of TRN17. The mobile crane operator will be required to retake and pass those portions of the training that was failed before qualifications to operate mobile cranes on the INEEL will be granted.
- 3.2.1.6 Re-qualifications period for mobile crane operators;
 - 3.2.1.6.1 Every three years for mobile crane operators trained and qualified through the INEEL Mobile Crane Operator training program.

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Refresher training can be accomplished by taking and completing TRN26 “refresher.”

- 3.2.1.6.2 Every five years for NCCCO qualified mobile crane operators. (NCCCO requires re-qualification every five years for mobile crane operators to maintain qualification).

NOTE: *Consideration will be given to state, or federal crane operator licensing requirements as well as certification programs administered by recognized private organizations.*

NOTE: *“Practical tests” for completion of mobile crane operator qualifications will be completed on the subcontractor’s mobile crane being operated on the INEEL.*

- 3.2.1.7 Physical Examinations - A copy of the mobile crane operator’s physical examination, as required in DOE-STD-1090, Chapter 15 section 15.3.1.a, shall be made available to CONTRACTOR.

- 3.2.1.7.1 Operator physical examinations shall be required ever three years or more frequently if supervision deems it necessary.

NOTE: *Department of Transportation (DOT), Commercial Drivers License (CDL) physical examinations are considered equivalent to above referenced requirement.*

3.3 PERSON-IN-CHARGE (PIC):

- 3.3.1 In additions to requirements in DOE-STD-1090 Chapter 15 Section 15.5.3.6 “Critical Lifts” the following training qualifications shall be completed for designated PICs supervising Critical Lifts.
- 3.3.1.1 Hoisting and Rigging Supervisor Awareness - 00TRN1009
 - 3.3.1.2 Hoisting and Rigging Person-In-Charge – 00TRN 1016
 - 3.3.1.3 Performing Pre-job Briefs – QLPREJOB
- 3.3.2 The responsible manager shall complete and submit Form 433.36 “Hoisting and Rigging Person-In-Charge (PIC)” to CONTRACTOR.

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3.4 Lift Determination

In additions to requirements in DOE-STD-1090 Chapter 15 section 15.5.2.5 “Ordinary Lifts” and 15.5.3.6 “Critical Lifts” the following requirements shall apply.

- 3.4.1 “Ordinary Lifts” greater than 50 ton or lifts that exceed 75 % of the mobile cranes lifting capacity at the radius being used to make the lift shall require an approved lift plan.
- 3.4.2 Crane lifts equal to or exceeding 90 % of the mobile cranes lifting capacity at the radius being used to make the lift shall be categorized as “Critical Lifts.”
- 3.4.3 Multiple crane lifts – lifts involving two or more cranes are complex operations requiring considerable skill and planning. It is absolutely critical that a detailed lift plan be developed. A multiple crane lift should be meticulously planned and every eventuality taken into consideration. Multiple Crane Lifts shall be designated as a “Critical Lift.”
- 3.4.4 Rigging from the tine of a forklift truck – Under normal forklift operations, rigging directly from the tines of a forklift truck is not allowed. The preferred method of overhead lifts is with a crane. If rigging directly from the forklift truck tines is the most effective way to perform the task, the subcontractor performing the work shall develop a rigging plan. The rigging plan should include the following information:
 - 3.4.4.1 Identification of item to be moved, the weight, dimensions, and center of gravity,
 - 3.4.4.2 Identification of the forklift truck, its rated capacity, and load center dimensions,
 - 3.4.4.3 Identification of rigging type, its rated capacity, and
 - 3.4.4.4 A sketch showing the rigging alignment.
- 3.4.5 Rigging should not be hung from a single tine; tines should be slid together. Single tine lifting must have an approved engineering evaluation.
 - 3.4.5.1 Sling angle should be as vertical as possible.
 - 3.4.5.2 “Tip” loading of the tine is prohibited.
 - 3.4.5.3 Only stable or safely arranged loads shall be handled in this manner.

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4. DEFINITIONS

None

5. REFERENCES

5.1 Source Documents

DOE-STD-1090 "Hoisting and Rigging" (Current Edition)

5.2 Related Requirements

Bechtel's Standard Work Process Procedures

4MP-T81-01901 "Crane Operator Qualifications"

4MP-T81-01903 "Construction Rigging Work Operations"

6. APPENDIXES

Appendix A, Mobile Crane Lift Plan, Form 433.21

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Appendix A**MOBILE CRANE LIFT PLAN**433.21
03/10/2004
Rev. 02

LOCATION: _____

DATE OF LIFT: _____

LOAD DESCRIPTION: _____

LIFT DESCRIPTION: _____

ORDINARY: _____

CRITICAL: _____

CLPIC: _____

MULTIPLE CRANE: _____

Signature _____

A. CRANE

1. Type of Crane _____
2. Crane Capacity _____ tons
_____ tons
3. Lifting Arrangement Crane #1 Crane #2
 - a. Center of Load
To Crane Center
Pin _____ ft. _____ ft.
 - b. Length of Boom _____ ft. _____ ft.
 - c. Angle of Boom _____ deg. _____ deg.
 - d. Rated Capacity (Reeved to _____ Parts of Line)
(From Chart)
 - 1) Over Rear _____ lbs. _____ lbs.
 - 2) Over Front _____ lbs. _____ lbs.
 - 3) Over Side _____ lbs. _____ lbs.

B. JIB

- Erected _____ Stowed _____
1. Length of JIB _____
 2. Rated/Capacity of JIB (From Chart) _____

C. CRANE PLACEMENT

1. Electrical Hazards in Area? _____

2. Obstacles or Obstructions to Lift or Swing?

3. Swing Direction and Degree (Boom Swing)

E. RIGGING

1. Sling Selection
 - a. Type _____
 - b. Number of Slings in Hook-Up _____
 - c. Sling Size _____
 - d. Sling Length _____
 - e. Rating Capacity of Sling _____
2. Shackle Selection
 - a. Capacity _____ tons
 - b. Number of Shackles _____

F. LOAD DEDUCTIONS

1. Weight of Headache Ball _____ lbs.
2. Weight of Block _____ lbs.
3. Weight of Spreader Beam _____ lbs.
4. Weight of Slings and Shackles _____ lbs.
5. Weight of Jib _____ lbs.
- _____ Erect _____ Stowed
6. Weight of Cable (Load Fall) _____ lbs.
7. Load Weight _____ lbs.
8. Other _____ lbs.
- TOTAL WEIGHT _____ lbs.

G. PRE-LIFT CHECKLIST

- | | YES | NO |
|------------------------------------|--------------------------|--------------------------|
| 1. Outriggers Fully Extended | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Crane Inspection Records | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Swing Room | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Head Room Checked | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Tag Line Used | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. Load Chart in Crane | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. Work Area Barricaded or Guarded | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. Wind Conditions | _____ | _____ |
| 9. Qualified Operator | _____ | _____ |
| 10. Qualified Rigger | _____ | _____ |
| 11. Designated Signaler | _____ | _____ |

SPECIAL INSTRUCTIONS OR RESTRICTIONS FOR CRANE, RIGGING, LIFT, ETC.

DATE: _____

Signature of Job Supervisor

Signature - Plan Checked By SME / Safety

DATE: _____

Rigging Configuration On Second Page

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RIGGING CONFIGURATION/CRANE AND LOAD PLACEMENT DIAGRAM